What is claimed is:

1. A method of optical wavelength allocation in an photonic network comprising the steps of:

generating a first plurality of optical wavelengths compatible with a first grid spacing at a first location in the network;

selecting a predetermined subset of wavelengths from the first plurality of optical wavelengths; and

transmitting the predetermined subset of wavelengths to a second location that is compatible with a second grid spacing greater than the first grid spacing.

2. A method as claimed in claim 1 wherein at least one of the subset of wavelengths is an unmodulated wavelength.

3. A method as claimed in claim 1 wherein at least one of the subset of wavelengths is a data modulated wavelength.

4. A method as claimed in claim 1 wherein the first grid spacing is a dense mode spacing.

5. A method as claimed in claim 4 wherein the first grid spacing is 100 GHz.

6. A method as claimed in claim 4 wherein the first grid spacing is 50 GHz.

7. A method as claimed in claim 1 wherein the second grid spacing is a sparse mode spacing.

8. A method as claimed in claim 7 wherein the first grid spacing is 400 GHz.

9. A method as claimed in claim 7 wherein the first grid spacing is 500 GHz.

10. A method of optical wavelength allocation in an photonic network comprising the steps of:

generating a plurality of optical wavelengths compatible with a first grid spacing at a first location in the network;

forming a group of wavelengths by grouping selected wavelengths; and

transmitting the group of wavelengths to a second location that is compatible with a second grid spacing greater than the first grid spacing in the network.

11. A method as claimed in claim 10 wherein at least one of the subset of wavelengths is an unmodulated wavelength.

12. A method as claimed in claim 10 wherein at least one of the subset of wavelengths is a data modulated wavelength.

13. A method as claimed in claim 10 wherein the first grid spacing is a dense mode spacing.

14. A method as claimed in claim 13 wherein the first grid spacing is 100 GHz.

15. A method as claimed in claim 13 wherein the first grid spacing is 50 GHz.

16. A method as claimed in claim 10 wherein the second grid spacing is a sparse mode spacing.

17. A method as claimed in claim 16 wherein the first grid spacing is 400 GHz.

18. A method as claimed in claim 16 wherein the first grid spacing is 500 GHz.

19. An optical switching node for a photonic network comprising:

a photonic switch core having a plurality of inputs and a plurality of outputs and capable of connecting any input to any output;

a first wavelength division demultiplexer coupled to a subset of the plurality of inputs for demultiplexing a core optical signal having a first multiplex density into optical channels; and

a first wavelength division multiplexer coupled to a subset of the plurality of outputs for multiplexing any optical channels connected to it into an access optical signal having a second multiplex density;

the second multiplex density being higher than the first.

20. An optical switching node as claimed in claim 19 wherein the second multiplex density is k times the first optical density, where k is an integer.

21. An optical switching node as claimed in claim 20 wherein the first wavelength division multiplexer includes N ports connected to N wavelength plane switches.

22. An optical switching node as claimed in claim 19 further comprising a second wavelength division demultiplexer coupled to a second subset of the plurality of inputs for demultiplexing an access optical signal having the second multiplex density into optical channels.

23. An optical switching node as claimed in claim 22 wherein the second multiplex density is k times the first optical density, where k is an integer.

24. An optical switching node as claimed in claim 23 wherein the first wavelength division multiplexer includes N ports connected to N wavelength plane switches.

25. An optical switching node comprising:

a photonic switch core operable to consolidate wavelengths from access multiplexers into a dense wavelength division multiplexed (DWDM) signal for transmission in a core network; and

including a multi-wavelength source for generating DWDM quality wavelengths for supplying the access multiplexers with unmodulated wavelengths upon which to multiplex data packets.

26. An optical switching node as claimed in claim 25 wherein the photonic switch core includes a predetermined number of ports on an access side.

27. An optical switching node as claimed in claim 25 wherein the photonic switch core includes a predetermined number of ports on a core network side.

28. An optical switching node as claimed in claim 27 wherein the predetermined number of ports on an access side is N and the predetermined number of ports on an core network side is M and N is greater than M.